

THE NEW YORK TIMES  
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## NEW CLUE FOUND FOR LUNG CANCER

Cigarette Smoke and Smog  
Said to Impair Respiratory  
Tract Defense Ability

Cigarette smoke and air pollutants in smog may contribute to the development of lung cancer by interfering with the fluids and minute hair-like structures in the lining of the respiratory tract.

This possibility was suggested in two reports from scientists at the University of Southern California School of Medicine that appear in the November number of The Journal of the National Cancer Institute, just out.

According to the reports, natural and artificial smog and their components, as well as smoke from both filtered and nonfiltered cigarettes, affect the respiratory tract's defense mechanisms in three ways.

They slow the flow of the mucous stream, change the physical properties of the mucous and decrease the whiplike action of the fine structures called cilia.

Normal functioning of the mucous and cilia are known to prevent the accumulation of

foreign matter on the lining of the respiratory tract.

The California scientists suggest that impairment of this function by smoke and cigarette smoke may permit the abnormal retention of cancer-causing chemicals there.

### Frog Esophagus Used

Evidence that various agents can affect ciliary activity and mucous flow has been accumulating for several years. The new study was confined to the effects produced by smog and smoke from cigarettes.

The scientists used the ciliated lining of the esophagus and adjoining portions of the intestinal tract of frogs as representative of similar tissue in the respiratory tract in mammals such as man. Parallel studies on mammals permitted the relation of their findings on frogs to higher animals, they wrote.

Smog and cigarette smoke was blown over or against the tissue in plastic chambers. The action of the mucous and cilia were measured after two-second exposures to the irritants.

The first reaction was an increased flow of mucous. This was followed immediately, the scientists wrote, by a sudden drop in the flow, then a gradual return to normal function.

The second phase of the response in which mucous flow decreased and the defense mechanism was presumably impaired was observed even at minute concentrations of irritants from smog and cigarette smoke.

DURHAM MORNING HERALD  
Durham, North Carolina  
December 27, 1959

## Air Pollution Said More Deadly Than Smoking In Cancer

CHICAGO (AP) — A man who has devoted his scientific career to a study of the causes of cancer contended Saturday that air pollution is a more important factor than cigarette smoking in the increase in lung cancer.

Dr. Wilhelm C. Hueper, chief of the Environmental Cancer Section, National Cancer Institute, Bethesda, Md., said an upsurge in lung cancer first was noted between 1900 and 1920, several years before the practice of cigarette smoking became widespread.

And he added that exposure to cancer-causing agents must occur at least 10 to 15 years before an increase in such deaths is detected statistically.

Hueper made his remarks during an interview at the annual meeting of the American Assn. for the Advancement of Science where he received the \$1,000 AAAS-Anne Franco Rosenthal Memorial Award for cancer research.

Hueper, 65, said exhaust fumes from gasoline and coal tar by-products spewed into the atmosphere by industry are the principal agents responsible for the sharp increase in lung cancer.

However, he said smoking may play a role. He said tobacco smoke contains small concentrations of cancer-causing agents and that smoke also can act as an irritant that weakens the lungs' normal defense mechanism.

He told newsmen he quit smoking 20 years ago.

Pollution from car exhausts fumes could be halted, he said, if auto makers could devise an engine that causes complete combustion of gasoline. Industrial plants, he went on, should seek to perfect a system whereby the air workers' breath would be free from vapors, gases and fumes.

U.S. NEWS & WORLD REPORTS  
Washington, D. C.  
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**SMOKING.** Smoking appears to have no effect on cholesterol levels in the blood, according to a study published in the "Journal of the American Medical Association." Dr. Irving H. Page, Cleveland heart specialist, and two associates report that, if smoking plays any role in heart attacks, it is not through cholesterol--the fatlike substance that has been linked with heart disease.

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## SMOKING TEST NEGATIVE

Cholesterol Levels in Blood  
Are Reported Unchanged

CHICAGO, Nov. 13 (UPI)—Smoking appears to have no effect on blood cholesterol levels, Dr. Irving H. Page, Cleveland heart specialist, reported today.

He said that he and two associates had concluded after a study that if smoking played a role in causing heart attacks it was not through any effect on cholesterol.

Cholesterol is a fat-like substance in the blood. It has been implicated as a cause of heart attacks. Many investigators believe there is evidence of a connection between high cholesterol levels and hardening of the arteries.

The report by Dr. Page was in The Journal of the American Medical Association.